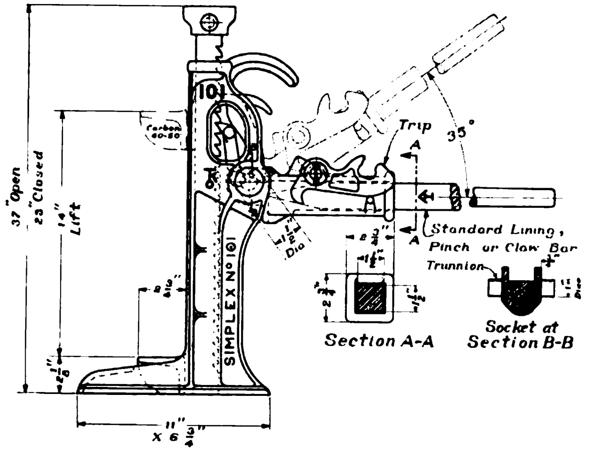
General

Templeton, Kenly & Co., Ltd., are the manufacturers of Simplex Jacks designed for use in track, bridge, car and locomotive work; for pole pulling and straightening; for mining, and for industrial, automobile and motor trucks. Their modern plant, covering a city block in Chicago, radiates success internally and externally. The company was organized in 1899 and has branches in Canada, Europe and Australia. Since its formation, a corps of trained men have devoted their energy, thought and skill to the production of a line of jacks to meet the new industrial or changing conditions of railway operation and maintenance. In this advancement not the least of the problems to be solved has been the overcoming of the inadequate design and improper use of jacks. That these efforts are meeting with success is shown by the extending application to track jacks of the square socket, designed for effective use of the lining bar as a lever in place of the wood pole; the increasing use of the Simplex single-acting track jack; the practical differentiation between the surfacing jack with an 8-in. raise and the ballast jack with a 19-in. raise; and recognition of the principle of entire interchangeability among the parts of both types of jacks.



Details of Construction of Simplex Jacks

Simplex Jacks

Simplex Jacks are designed and built to serve the purpose of raising and sustaining continuously the maximum load to which they may be subjected in service. These jacks are constructed along exclusive lines and with a well-tested mechanism. A distinguishing feature of the design is the heavy 1-in. steel fulcrum trunnion, cast integral with the steel lever socket (see illustration Simplex Track and Ballast Jacks), which rotates in hardened steel, lubricant-retaining bearings, keyed to avoid rotation or lateral movement. The dust-proof bushings insure lubrication through an entire season without attention.

The materials used in Simplex jacks are, in general, malleable iron for the standards; crucible steel for the sockets; and drop forgings for the rack bar, pawls, bushings and keys. The liberal use of alloy and high carbon forgings and the safeguarding of all details of the specification are necessary provisions for meeting the severe requirements of railway work today; and it is well recognized that the strength of the jack and its sufficiency for the service in which it will be used are essential matters for the furtherance of the "safety first" idea.

The Simplex Track jacks include both single and double-acting jacks, tripping from all positions or lowering tooth by tooth as required.

Simplex Track Jacks

One of the first radical departures from accepted track jack design, originated by and brought into use through the ingenuity of Templeton, Kenly & Co., Ltd., was the application of the Simplex square lever socket to new or old track and ballast jacks to facilitate the use of a lining bar as a jack lever. This use of the bar had long been in vogue in a makeshift way, brought about by the necessity for increased leverage in raising track laid with rails which had grown one-half heavier in section and which, by their greater stiffness, involved increased scope for every lift; in which one-third more ties, larger and heavier than in the past, had become necessary through the increasing weight of traffic; and in which the lighter gravel and cinder ballast had progressively given way to stone. Along with the manifest increase in the weight of track has also come the substitution of a generally lighter type of men in the labor forces.

The increase in power of the track jack when used with a 66-in. lining bar over that with the 48-in. wood pole, may be figured readily as 37½ per cent. The actual ratio of weight to power in the former case, assuming 21/32 in. fulcrum centers and a 68-in. lever arm, is as 1 to 104. The importance of this feature is that it avoids the need for putting two men on the lever; the Simplex is distinctly a one-man jack.

This increased power presupposes that all parts of the jack, standard, rack bar, pawls, socket and trunnions are strong enough to withstand the additional load which may and assuredly will be imposed upon the jack as a result of the increased leverage. This

Model	Mechanism	Type	*Cap. Tons	Height Inches	Lift Inches	Weight Lbs.
No. 101 Simplex	Double-Acting	Track	10	21½	14	58
No. 106 Simplex	Double-Acting	Ballast	15	28½	19	70
No. 116 Simplex	Single-Acting	Surfacing	10	15½	8	46
No. 117 Simplex	Single-Acting	Track	10	20½	12½	53
No. 118 Simplex	Single-Acting	Ballast	15	28	18¾	70

*Since the parts of the 10 and 15-ton jacks are interchangeable, the capacities are identical, but to avoid confusion, the capacities are given under which these track and ballast jacks are universally specified.

MATERIAL SPECIFICATIONS

Standard—Malleable Iron; Lever Socket—Crucible Steel; Cap—Malleable Iron; Rack Bar—Drop-Forged Steel, 40-50 Carbon; Pawls—Drop-Forged Steel, 40-50 Carbon; Bushings—Hardened Steel.

Simplex Track and Ballast Jacks

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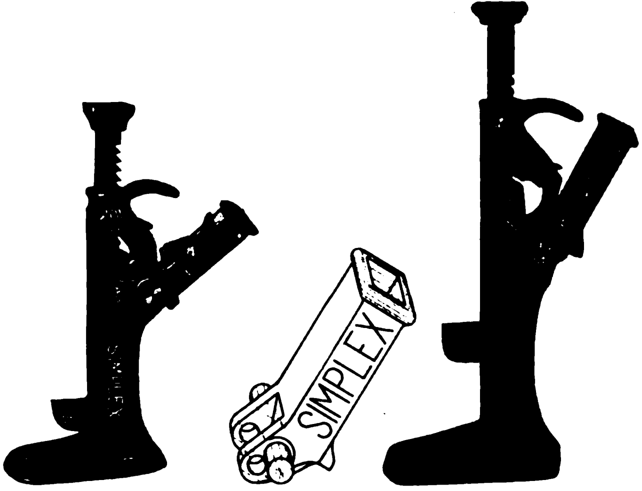
is insured in the Simplex track jacks through a common construction of these members for interchangeability between the 10-ton and 15-ton jacks. This uniformity also facilitates the replacement of parts and reduces the stock account materially.

The question as to the kind of jack to be used in track work had received careful study. Practice heretofore has favored the double-acting jack, probably because it has always been considered to be quicker and more accurate. Since the double-acting jack raises only a half notch on the upward and a half notch on the downward stroke, while the single-acting jack raises the full notch on the downward or effective stroke, there is no apparent difference in time; but as a demonstrable fact, the latter jack raises the load faster. Maintenance men well know that the displacement of the jack from the vertical position, which tends to throw the track out of line, occurs almost entirely on the upstroke of the double-acting jack.

An important point in Templeton, Kenly & Co., service to the maintenance department is the part it has played in the establishment of the 10-ton jack with an 8-in. raise as the practical type for track work, and of the 10-ton jack with a 14-in. raise and the 15-ton jack with a 19-in. raise, for ballasting work. Maintenance rules require that the lifts shall be so regulated as not to strain the joints or bend the splice bars. An examination of many of the rack bars from jacks having a 14-in. raise which had been worn out in regular maintenance service proved that not more than one-half of the teeth had been used enough to show any sign of wear. Since height produces weight and cost, the use of the low lift jack for surfacing and general work, leaving the jack with higher lifts to the greater requirements of the heavier track work, contributes both to economy and efficiency.



Simplex Track and Ballast Jacks

Simplex Bridge Jacks

The Simplex Bridge Jacks, with a capacity of 15-tons and with lifts of 11½ in. and 17½ in. are specially designed for bridge, track crossing and heavy construction work. They are single-acting and lower the load by stages.

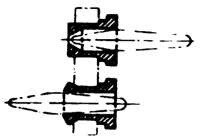
The mechanism of these jacks is uniform with all Simplex car jacks and their safety has been recognized by the award of the Gold Medal of the American Museum of Safety.

Simplex Bridge Jack

Simplex Bridge and Car Jacks operate on the down stroke—the effective stroke—of the lever. They are extremely simple in their design and maintenance, and well justify their internationally known trade mark "Simplex." The material utilized and its finish is indicative of the pride which the manufacturers have in their product.

The Oval Socket and Oval Pole is an exclusive Simplex feature. This oval pole produces safety in that it cannot be inserted in the socket "cross grained" and, being unbreakable, it protects the operator and his company against accidents and their attendant expense. By virtue of the oval shape adding strength to the pole, it is practical to use longer lever poles. The additional length of the lever produces greater man power with complete safety.

The Simplex expansion rivet is used in all Simplex jacks in lieu of screws which in the past, by working loose, frequently caused jacks to become inoperative. The expansion rivet is of soft steel, hollow, and with a funnel-shaped interior surface which becomes reversed under the wedge action of a tool steel expander driven by a hand hammer.



Simplex Pole Jacks

The Simplex Pole Pulling and Pole Straightening jacks are necessary tools for the telegraph department or the fence gang, since they will lift a pole or post from the ground or straighten it in place without digging, and in a fraction of the time formerly deemed necessary. The No. 318 Simplex is a tripping type and the No. 328 is the automatic lowering. The former may be tripped to low position from any point, while the latter lowers tooth by tooth.

Simplex Pole Jack